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October 21, 1980

Mr. Fred Matter, P. E.
Chief, Monitoring and Enforcement Section
Water Quality Control Division
Colorado Department of Health
4210 East 11th Avenue
Denver, Colorado 80221

Re: Sediment Analysis, St. Louis Settling Ponds, Rico, Colorado
NPDES Permit CO-0029793

Dear Mr. Matter:

On September 30, 1980 sediment samples were collected from the final four St. Louis settling ponds. These ponds are downstream from the recently installed parshall flume where self monitoring samples will be taken.

Two sediment samples were collected from each pond. The samples were collected by the use of a 1.5 inch PVC core sampling pipe. The pipe was pressed, at an approximately 90 degree angle, into the sediment in such a manner as to collect a sediment core. The semi-solid core was then extracted from the sampler, washed into a plastic tray, and then poured into a one liter cubitainer for subseuqent analysis at the Anaconda Metallurgical Research Laboratory in Tucson, Arizona.

The uppermost pond, pond 4, was easily sampled as the pond substrate contained six inches to over one foot of sediment. The other three ponds were not as easily sampled as they were relatively free of sediment and were 70 - 100% covered by aquatic plants. The sediment in these lower ponds is poorly compacted and has a soupy, soil-silt consistency. All samples collected from ponds 1 - 3 were characterized by the presence of a large volume of aquatic plant roots and vegetative debris.

The attached map references the sample point locations.

The attached table I shows the analytical results for the eight samples collected.

In addition to the analyses of the eight sediment samples referenced above, analytical data from a sediment sample collected on September 11, 1980 from settling pond 18 is enclosed. Settling pond 18 is the second in a series of 19 ponds which receive waters from the St. Louis adit. The sediment analyses are presented in Table II.

In addition to the metals analyses, a RCRA leachability test was performed on the pond 18 sediment sample. The results of the RCRA test are provided in Table III. It should be noted that the cyanide analysis was made on a distilled water leachate and the resultant analysis is for soluble cyanide.

Sincerely,

Robert L Dent/jw

Robert L. Dent
Senior Project Coordinator

RLD/ejm
Attachments

TABLE II

TEST RESULTS

Sample	% Fe	% Cu	% Cd	% Zn	% Pb	1200°F L.O.I.
Settling Pond Sediment (Pond 18)	36.8	0.26	0.015	2.80	0.11	16.7

TABLE III

TEST RESULTS RCRA

Sample Code	MRD No	Lot No	Wt gms	Vol mls	Final pH	.5NHAC mls	ppm(ug/gm) As	Ba	Cd	Cr	Pb	Hg	Se	Ag	CN
Settling Pond Sediment	80-155	80T029	100	2000	5.02	42	<.005	0.42	0.32	<.005	0.21	<.0005	<.005	<.005	<0.03 *

* Distilled Water Leach
- Water Soluble Cyanide

TABLE I

St. Louis Settling Pond Sediment Analysis

Station	%Cu	%Zn	%Fe	%Cd	%Pb	ppm Hg
1A, SW Corner of Pond 1	0.040	1.11	6.8	0.013	0.05	0.18
1B, East Side Center of Pond 1	0.034	0.44	6.0	0.007	0.07	0.16
2A, NE Corner of Pond 2	0.024	0.42	8.6	0.003	0.12	0.08
2B, SW Corner of Pond 2	0.008	0.09	4.0	0.001	0.02	0.17
3A, NE Corner of Pond 3	0.053	0.28	7.8	0.003	0.22	0.17
3B, SW Corner of Pond 3	0.030	0.30	4.2	0.007	0.06	0.15
4A, NE Corner of Pond 4	0.18	0.49	8.4	0.007	0.33	0.14
4B, SW Corner of Pond 4	0.058	1.00	8.0	0.013	0.05	0.14